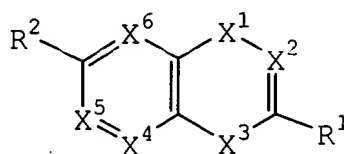


Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of claims:

1. – 9. (Canceled).
10. (Currently Amended) A compound of formula (I)



or enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts and solvates thereof wherein:

X¹ is C=O;

X² is CR³;

X³ is -NH-;

X⁴ is CR⁴;

X⁵ is CR⁵;

X⁶ is CR⁶;

R¹ is alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heterocycloalkyl, or heteroaryl, ~~provided that when R¹ is alkyl, substituted alkyl or alkenyl, R² is not cyano;~~

R² is ~~cyano or~~ a substituted or unsubstituted monocyclic heteroaryl group, ~~provided that when R² is cyano R¹ is not alkyl, substituted alkyl or alkenyl;~~

R³ is hydrogen, hydroxy, halogen, cyano, CO₂R⁷, NR⁸R⁹, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, cycloalkyl, substituted cycloalkyl, aryl, substituted aryl, heterocycloalkyl or heteroaryl;

R⁴, R⁵, and R⁶ are independently selected from the group consisting of hydrogen, halogen, nitro, cyano,

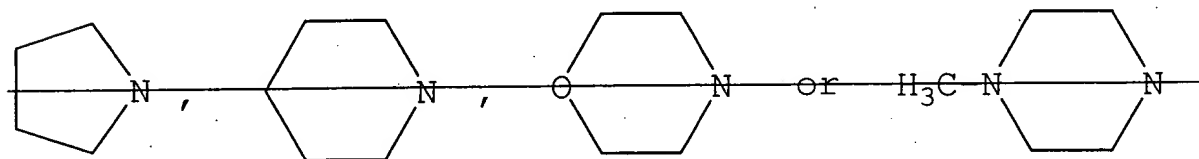
$O-R^7$, NR^8R^9 , SR^7 , $S(O)R^7$, SO_2R^7 , SO_3R^7 , $SO_2NR^8R^9$, CO_2R^7 , $C(O)NR^8R^9$, $C(O)alkyl$, $C(O)substituted\ alkyl$, $alkyl$, $substituted\ alkyl$, $alkenyl$, $substituted\ alkenyl$, $alkynyl$ and $substituted\ alkynyl$;

R^7 , R^{10} , and R^{11} , are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, alkenyl, alkynyl, cycloalkyl, substituted cycloalkyl, $C(O)alkyl$, $C(O)substituted\ alkyl$, $C(O)cycloalkyl$, $C(O)\ substituted\ cycloalkyl$, $C(O)aryl$, $C(O)substituted\ aryl$, $C(O)Oalkyl$, $C(O)Osubstituted\ alkyl$, $C(O)heterocycloalkyl$, $C(O)heteroaryl$, aryl, substituted aryl, heterocycloalkyl and heteroaryl; and

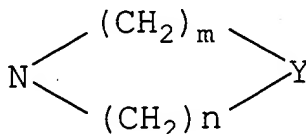
R^8 and R^9 are independently selected from the group consisting of hydrogen, alkyl, substituted alkyl, cycloalkyl, substituted cycloalkyl, alkenyl, alkynyl, $C(O)alkyl$, $C(O)substituted\ alkyl$, $C(O)cycloalkyl$, $C(O)substituted\ cycloalkyl$, $C(O)aryl$, $C(O)substituted\ aryl$, $C(O)Oalkyl$, $C(O)Osubstituted\ alkyl$, $C(O)heterocycloalkyl$, $C(O)heteroaryl$, aryl, substituted aryl, heterocycloalkyl, and heteroaryl or R^8 and R^9 taken together with the nitrogen atom to which they are attached complete a heterocycloalkyl or heteroaryl ring[;]

with the following proviso[s]:

- (a) ~~when R^1 is substituted or meta-unsubstituted phenyl, R^3 is H, R^4 is H, R^5 is H and R^6 is H, then R^2 is not $PhCONH$,~~



- (b) ~~when R^1 is phenyl substituted with H, F, Cl, Br, I, CH_3 , CF_3 , OH, OCH_3 , OCF_3 , OCH_2CH_3 , NH_2 , $NHCH_3$, $N(CH_3)_2$, O benzyl, $C(=O)R_0$, or $C(=O)OR_0$ and R_0 is a lower alkyl group, R^3 is H, R^4 is H, R^5 is H and R^6 is H, then R^2 is not~~

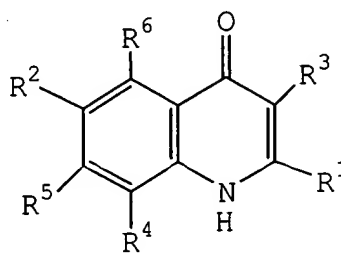


~~where Y is CH_2 , O or S, m and n are each greater than 1, and the sum of m and n is between 3 and 6; and~~

(c) when R^2 is heteroaryl, at least one of the heteroatoms must be O.

11. (Canceled)

12. (Currently Amended) A compound of Claim 10 of formula (III)



(III)

or enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts and solvates thereof wherein:

R^2 is 4-oxazolyl, substituted 4-oxazolyl, 5-oxazolyl, or substituted 5-oxazolyl;

R^3 is hydrogen, hydroxy, NR^8R^9 , alkyl of 1 to 4 carbons, alkenyl of 2 to 4 carbons, alkynyl of 2 to 4 carbons, substituted alkyl of 1 to 4 carbons, phenyl, substituted phenyl, cycloalkyl of 5 to 7 carbons, substituted cycloalkyl of 5 to 7 carbons, monocyclic heterocycloalkyl and monocyclic heteroaryl;

R^4 is hydrogen, halogen, nitro, hydroxy, alkyl of 1 to 4 carbons, cyano, CF_3 , OCF_3 , OCH_3 , SCH_3 , $S(O)CH_3$, or $S(O)_2CH_3$;

R^5 is hydrogen, halogen, nitro, hydroxy, alkyl of 1 to 4 carbons, cyano, vinyl, CF_3 , CF_2CF_3 , $CH=CF_2$, OCH_3 , OCF_3 , $OCHF_2$, SCH_3 , $S(O)CH_3$, or $S(O)_2CH_3$; and

R^6 is hydrogen, halogen, nitro, hydroxy, alkyl of 1 to 4 carbons, cyano, CF_3 , OCH_3 , OCF_3 , SCH_3 , $S(O)CH_3$, and $S(O)_2CH_3$.

13. (Currently Amended) A compound of Claim 12 or enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts and solvates thereof wherein:

R^2 is 4-oxazolyl, substituted 4-oxazolyl, 5-oxazolyl, or substituted 5-oxazolyl ~~or heteroaryl~~;

R^3 is hydrogen, hydroxy, halogen, methyl or NR^8R^9 ;

R⁴ is hydrogen;

R⁵ is halogen, methyl, ethyl, substituted alkenyl, alkyne, OMe or OCF₃; and

R⁶ is hydrogen.

14. (Currently Amended) A compound of Claim 13 or enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts and solvates thereof wherein:

R² is 4-oxazolyl, substituted 4-oxazolyl, 5-oxazolyl or substituted 5-oxazolyl;

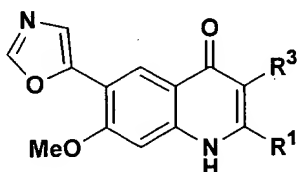
R³ is hydrogen, hydroxy, halogen or methyl;

R⁴ is hydrogen;

R⁵ is halogen, methyl or OMe; and

R⁶ is hydrogen.

15. (Currently Amended) A compound of Claim 10 of formula (V)

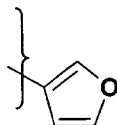


(V)

or enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts and solvates thereof selected from:

a compound of formula (V) wherein:

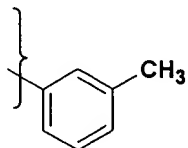
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

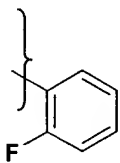
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

R^1 is



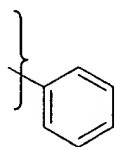
and R^3 is hydrogen;

a compound of formula (V) wherein:

R^1 is CH_3 and R^3 is hydrogen;

a compound of formula (V) wherein:

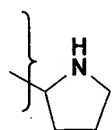
R^1 is



and R^3 is CH_3 ;

a compound of formula (V) wherein:

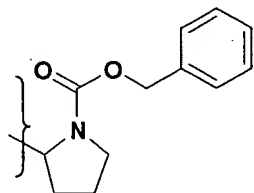
R^1 is



and R³ is hydrogen;

a compound of formula (V) wherein:

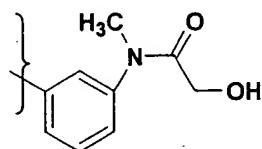
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

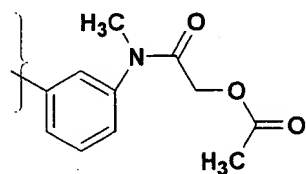
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

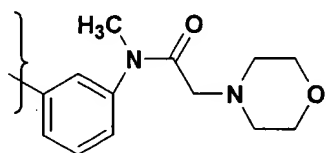
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

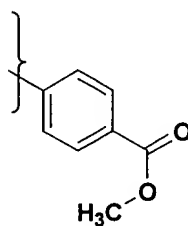
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

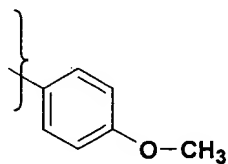
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

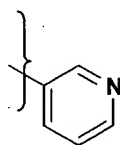
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

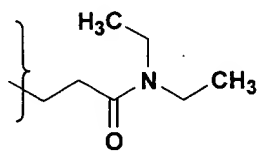
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

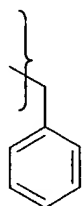
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

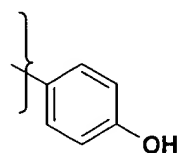
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

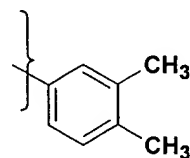
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

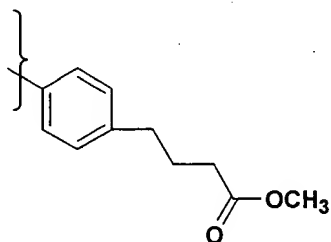
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

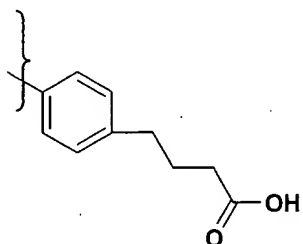
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

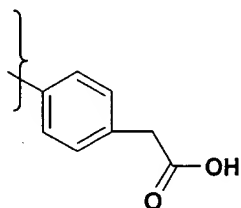
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

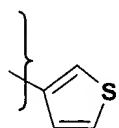
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

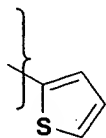
R¹ is



and R^3 is hydrogen;

a compound of formula (V) wherein:

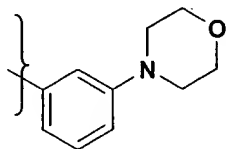
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

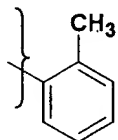
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

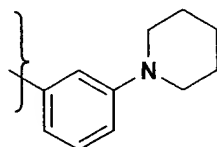
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

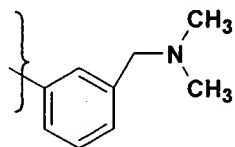
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

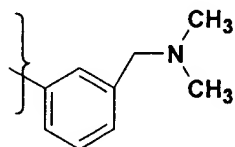
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

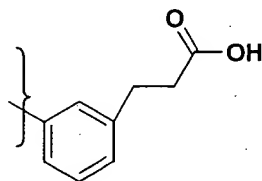
R^1 is



and R^3 is Br;

a compound of formula (V) wherein:

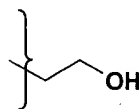
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

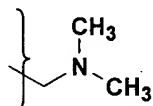
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

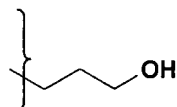
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

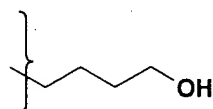
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

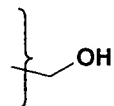
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

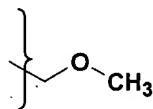
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

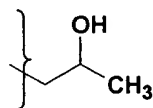
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

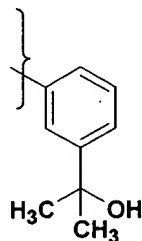
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

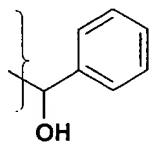
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

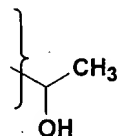
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

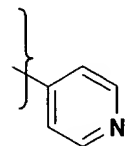
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

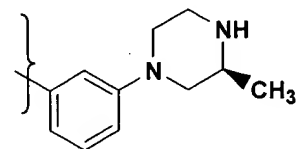
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

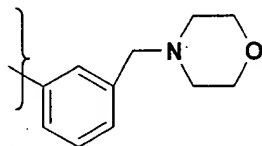
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

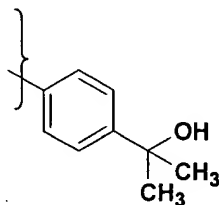
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

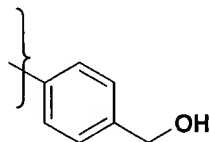
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

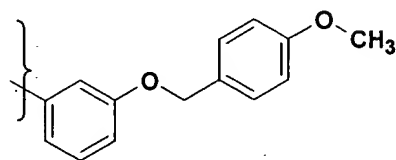
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

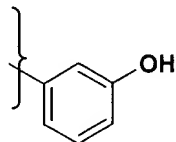
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

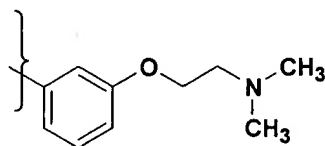
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

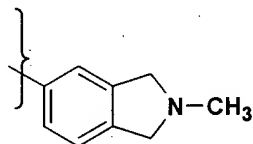
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

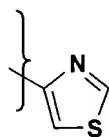
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

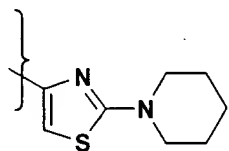
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

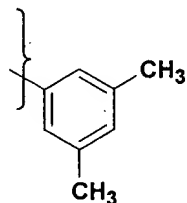
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

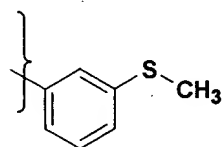
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

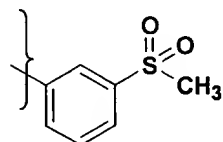
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

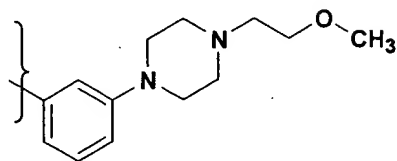
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

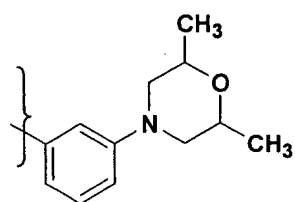
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

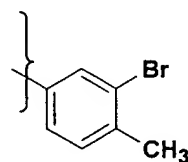
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

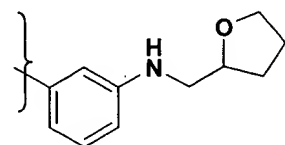
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

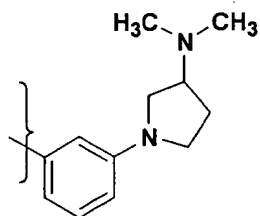
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

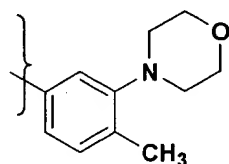
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

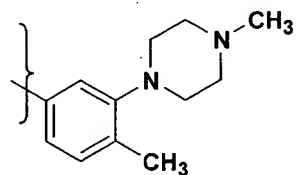
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

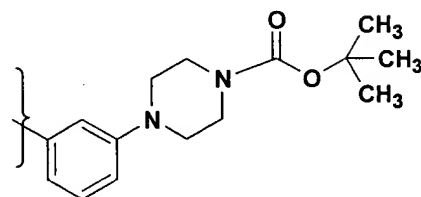
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

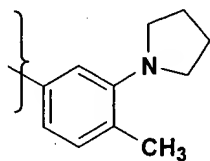
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

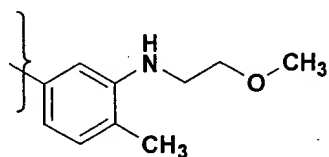
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

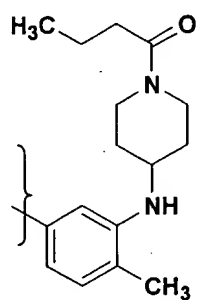
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

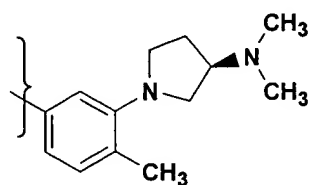
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

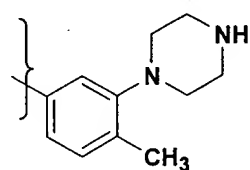
R^1 is



and R³ is hydrogen;

a compound of formula (V) wherein:

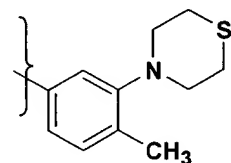
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

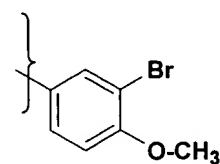
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

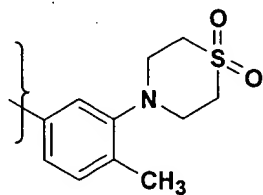
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

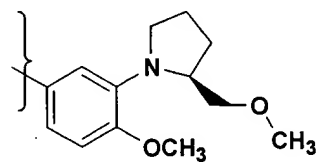
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

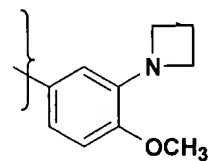
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

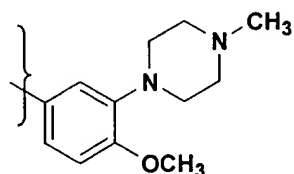
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

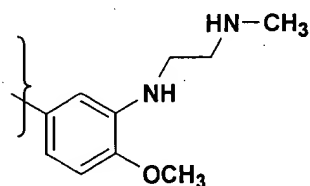
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

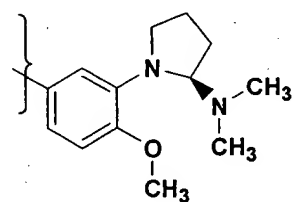
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

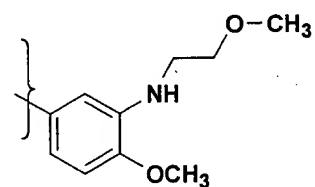
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

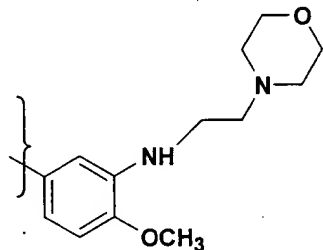
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

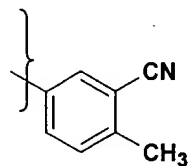
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

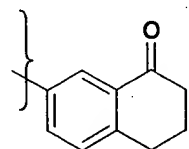
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

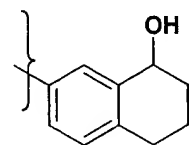
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

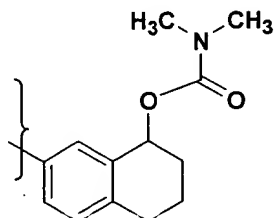
R¹ is



and R^3 is hydrogen;

a compound of formula (V) wherein:

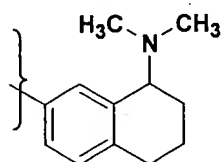
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

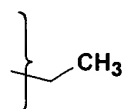
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

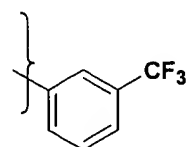
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

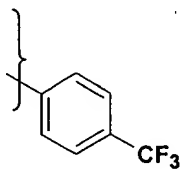
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

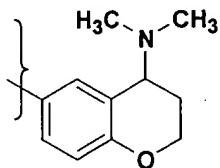
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

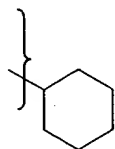
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

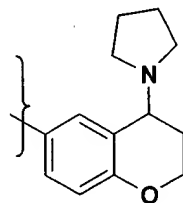
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

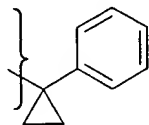
R¹ is



and R³ is hydrogen;

a compound of formula (V) wherein:

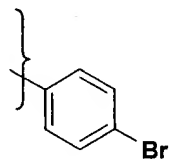
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

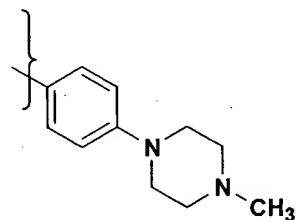
R^1 is



and R^3 is hydrogen;

a compound of formula (V) wherein:

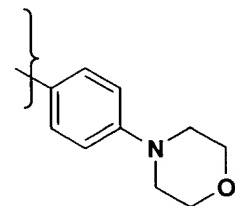
R^1 is



and R^3 is hydrogen;

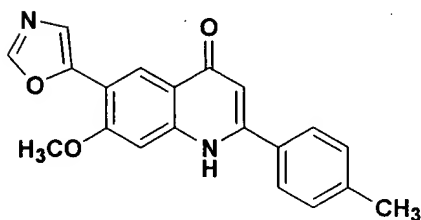
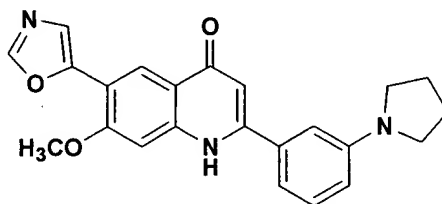
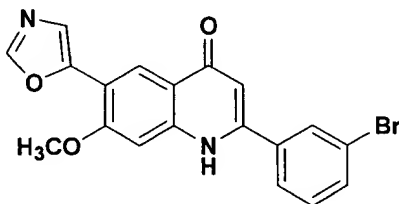
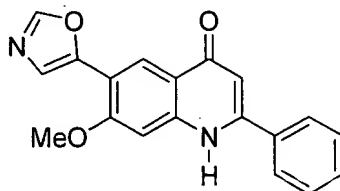
and a compound of formula (V) wherein:

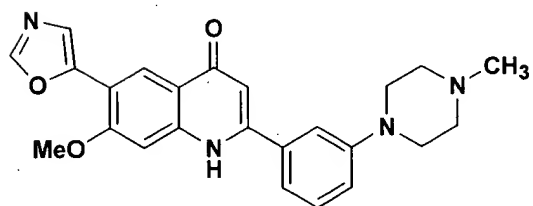
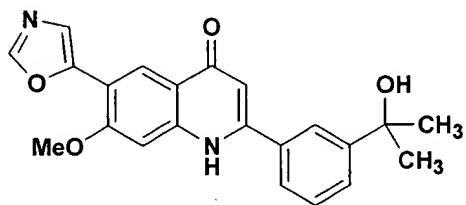
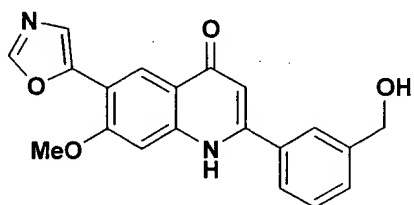
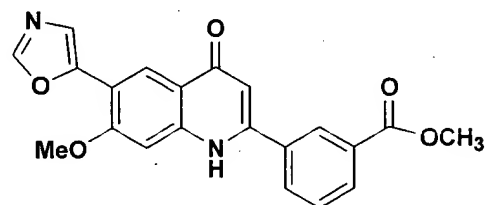
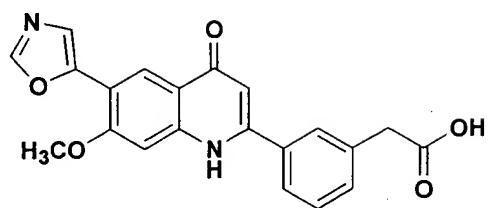
R^1 is

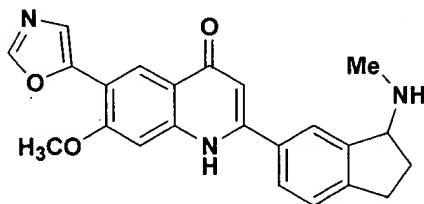
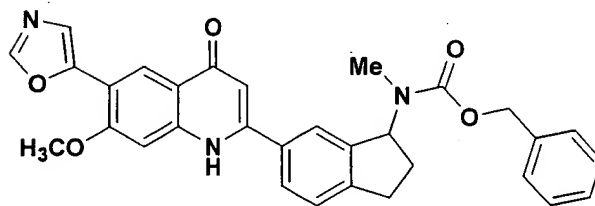
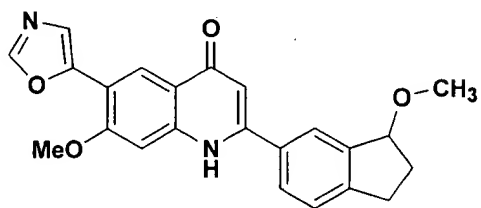
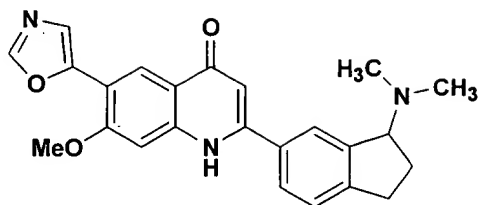


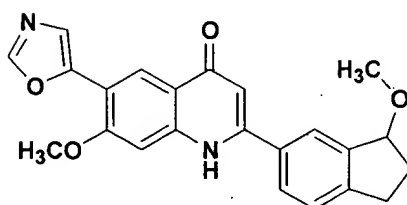
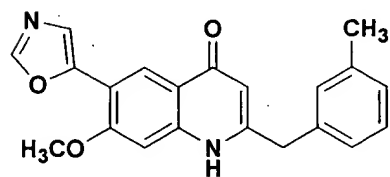
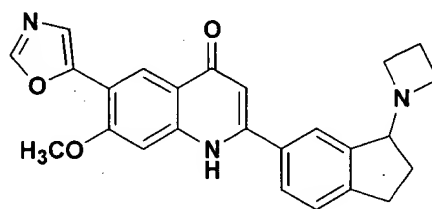
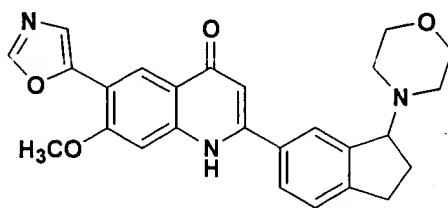
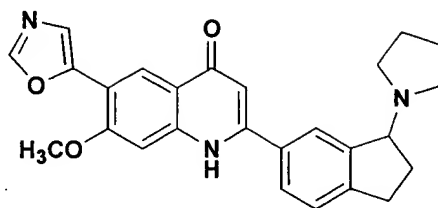
and R³ is hydrogen.

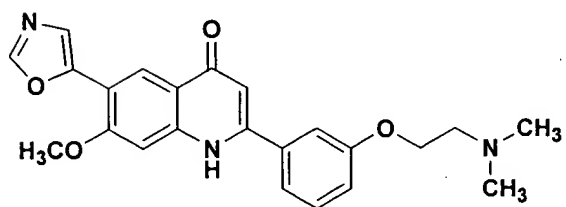
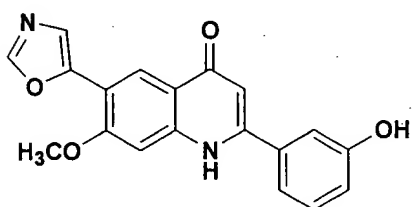
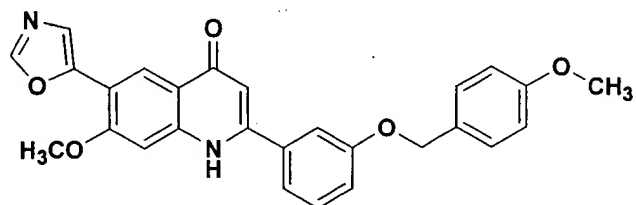
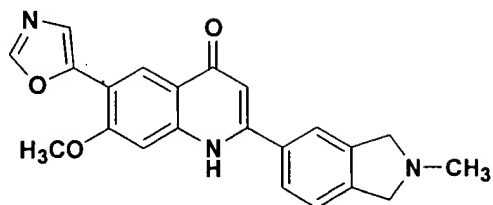
16. (Previously Amended) A compound of Claim 10 or enantiomers, diastereomers, tautomers, pharmaceutically acceptable salts and solvates thereof selected from:

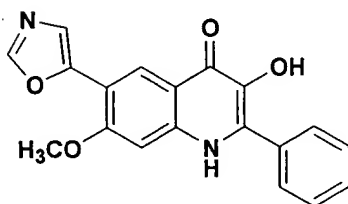
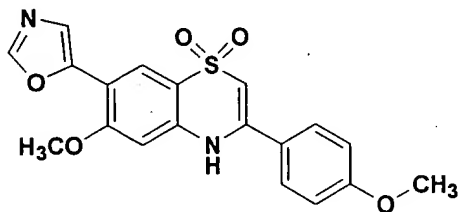
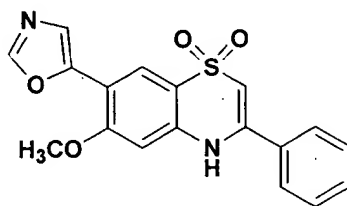
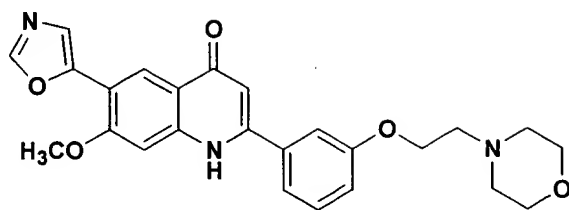


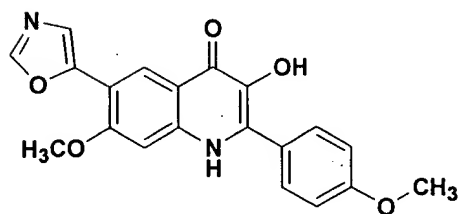
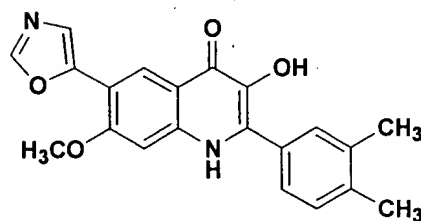
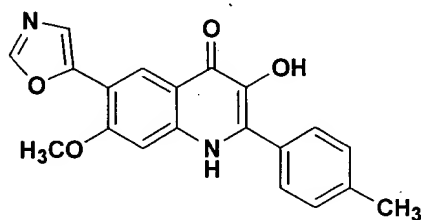
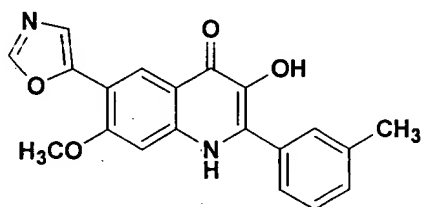
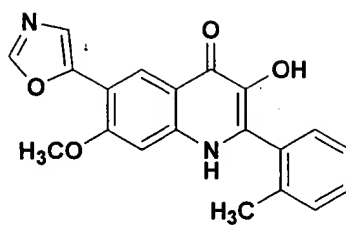


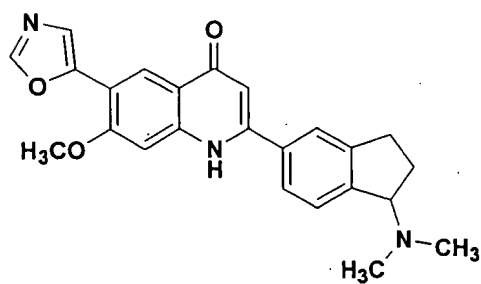
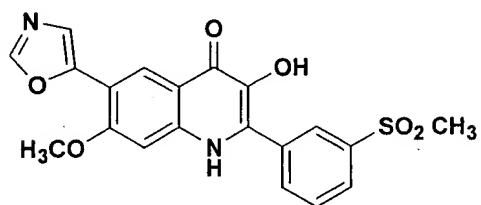
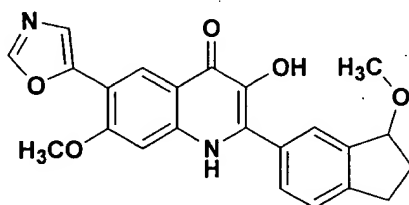
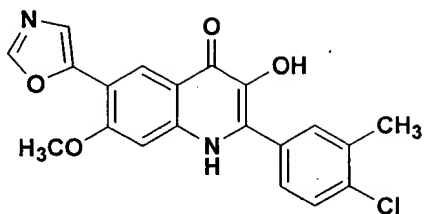


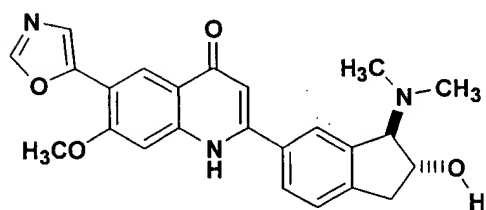
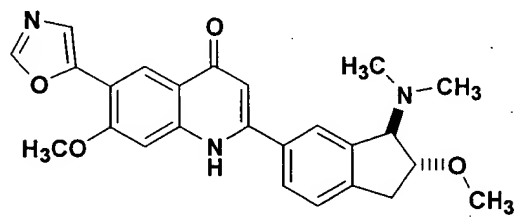
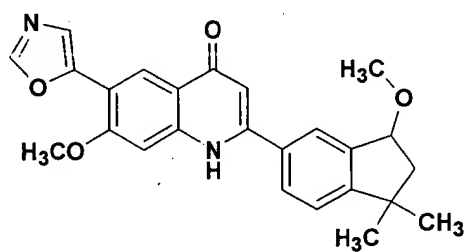
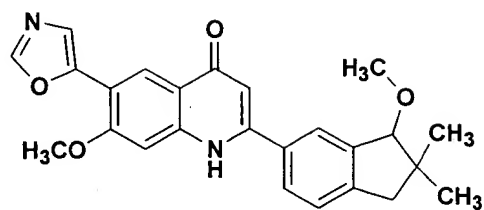


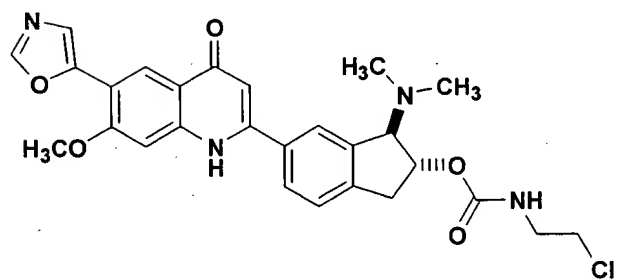
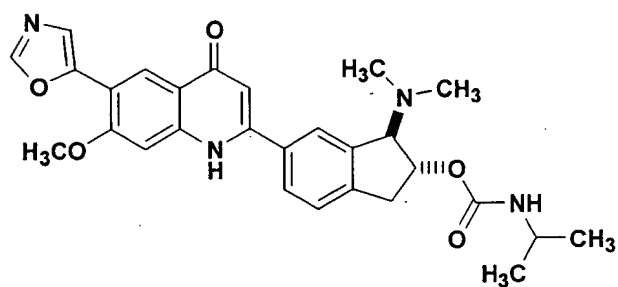
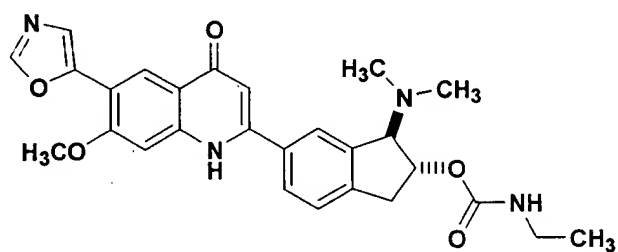
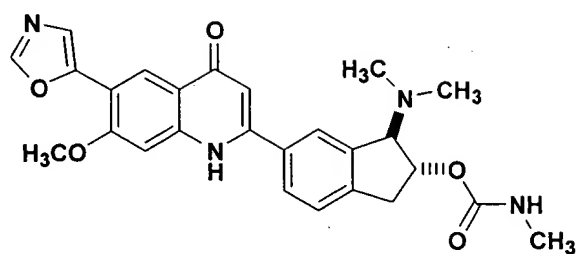


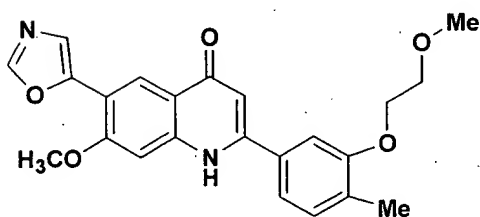
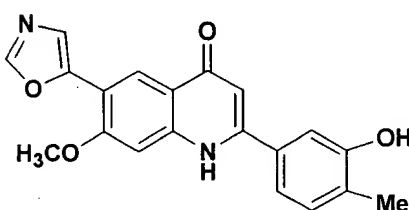
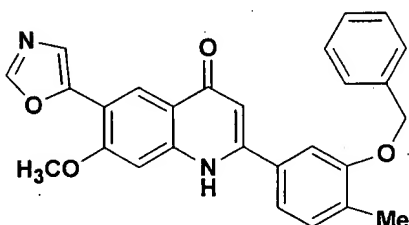
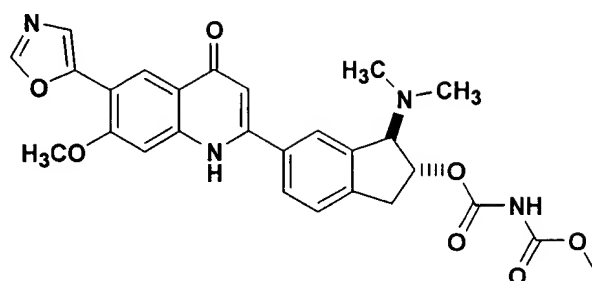


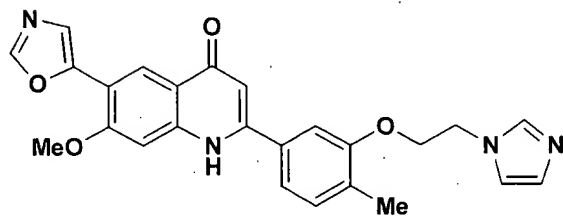
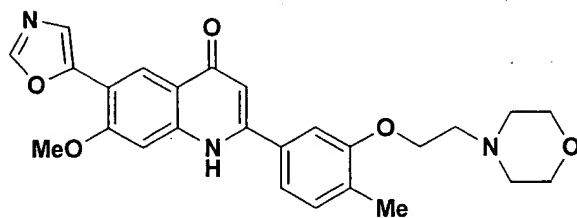
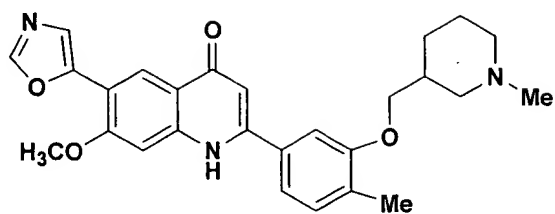


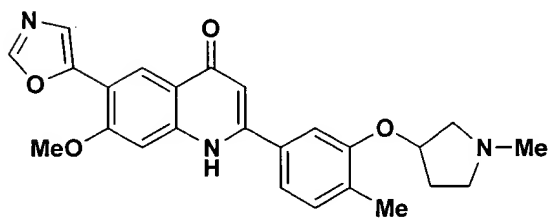
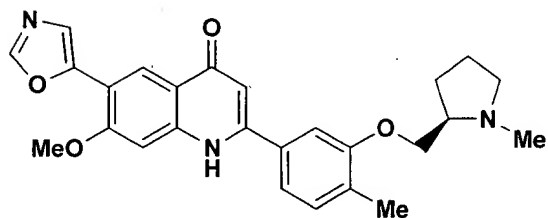
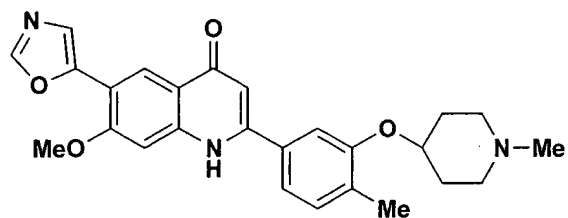
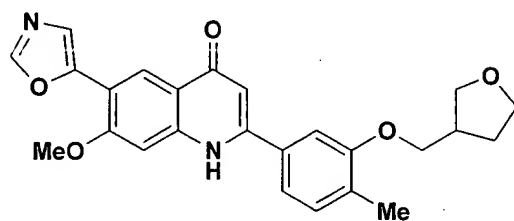
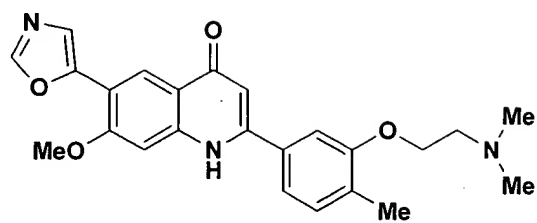


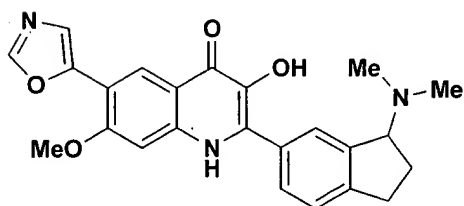
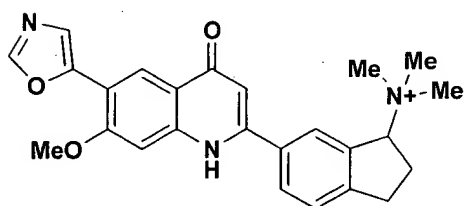
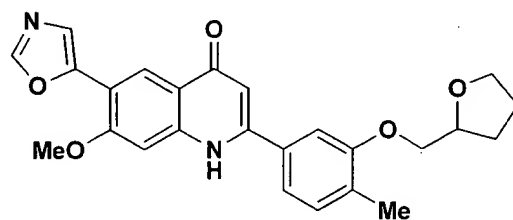
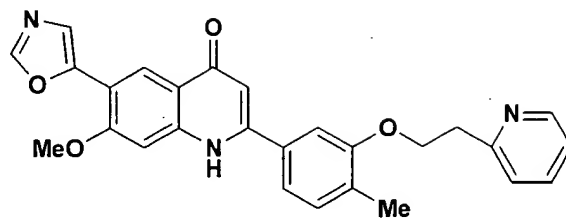


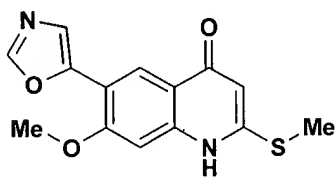
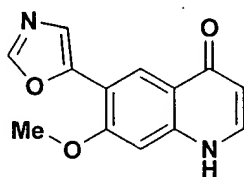
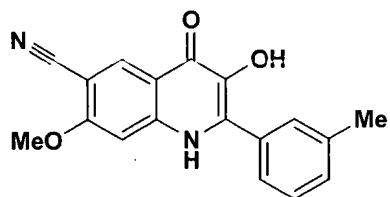
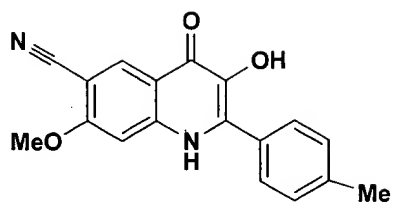


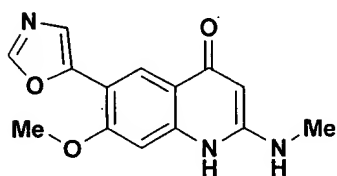
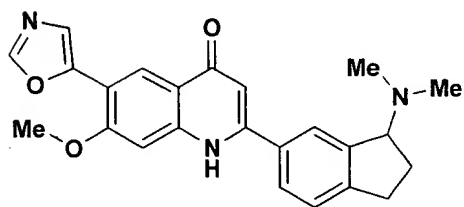
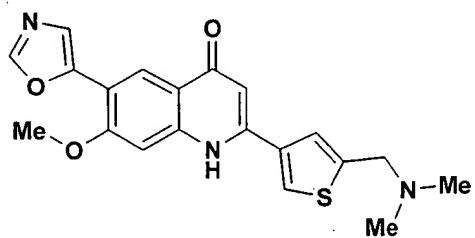
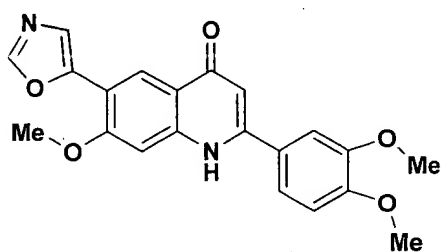
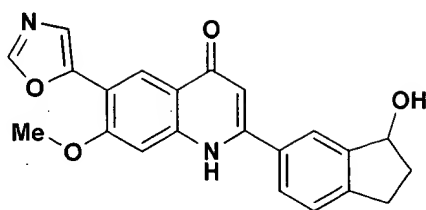


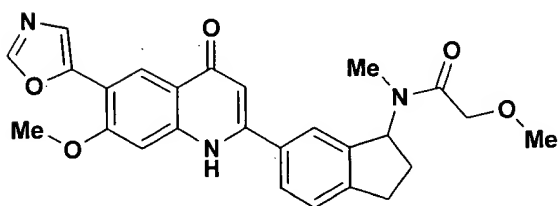
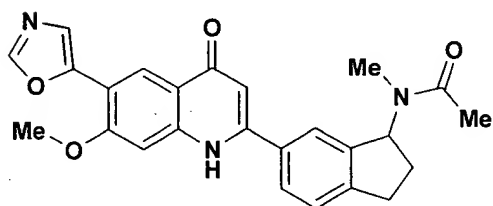
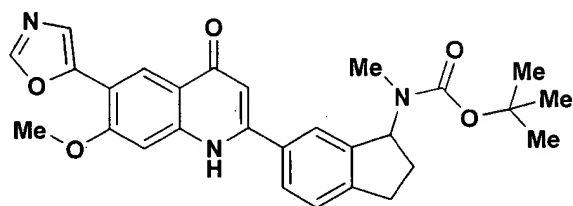
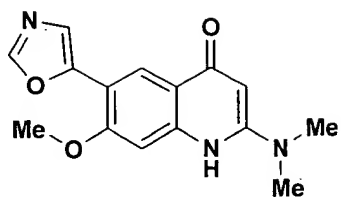


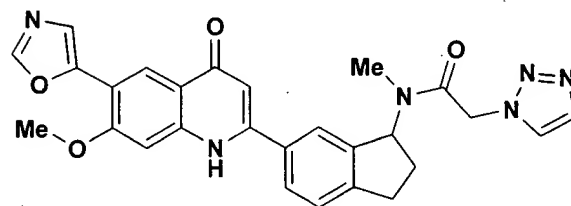
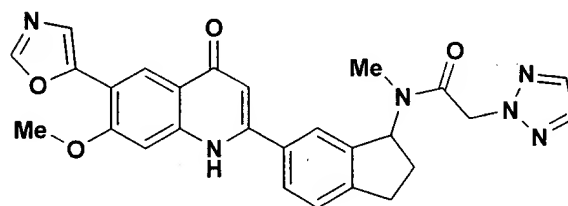
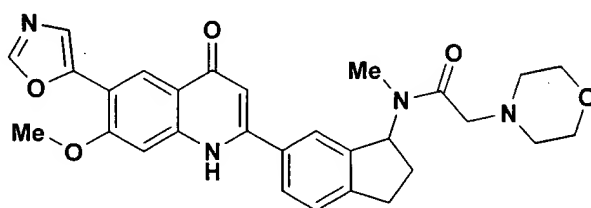
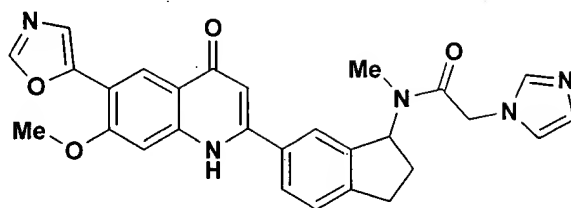


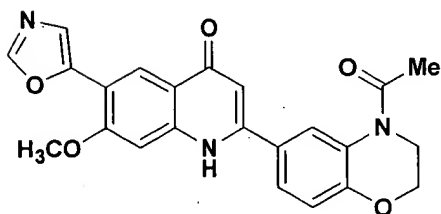
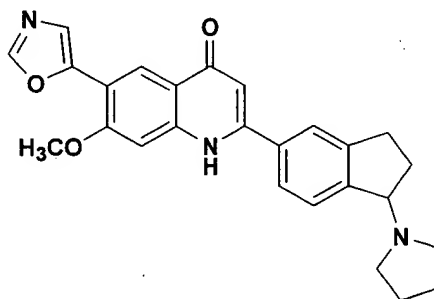
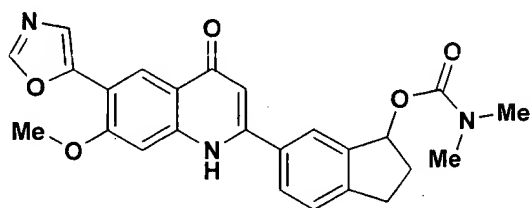
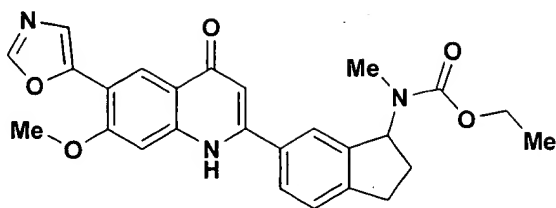


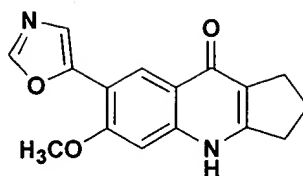




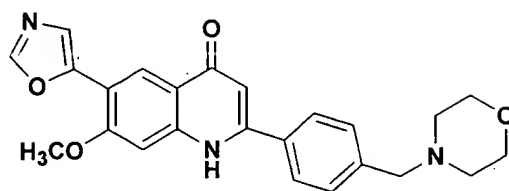








and



17. (Original) A pharmaceutical composition comprising a compound of Claim 10 and a pharmaceutically acceptable carrier.
18. (Original) A pharmaceutical composition comprising a compound of Claim 11 and a pharmaceutically acceptable carrier.
19. (Original) A pharmaceutical composition comprising a compound of Claim 12 and a pharmaceutically acceptable carrier.
20. (Original) A pharmaceutical composition comprising a compound of Claim 13 and a pharmaceutically acceptable carrier.
21. (Original) A pharmaceutical composition comprising a compound of Claim 14 and a pharmaceutically acceptable carrier.
22. (Original) A pharmaceutical composition comprising a compound of Claim 15 and a pharmaceutically acceptable carrier.
23. (Original) A pharmaceutical composition comprising a compound of Claim 16 and a pharmaceutically acceptable carrier.

24. -29. (Canceled)

30. (Previously Added) A method of treating inosine monophosphate dehydrogenase associated disorders comprising: administering a therapeutically effective amount of a compound of claim 10.

31. (Previously Added) A method of treating inosine monophosphate dehydrogenase associated disorders comprising: administering a therapeutically effective amount of a compound of claim 11

32. (Previously Added) A method of treating inosine monophosphate dehydrogenase associated disorders comprising: administering a therapeutically effective amount of a compound of claim 12.

33. (Previously Added) A method of treating inosine monophosphate dehydrogenase associated disorders comprising: administering a therapeutically effective amount of a compound of claim 13.

34. (Previously Added) A method of treating inosine monophosphate dehydrogenase associated disorders comprising; administering a therapeutically effective amount of a phosphodiesterase Type 4 inhibitor and a compound of claim 10.

35. (Previously Added) A method for the treatment or prevention of allograft rejection comprising: administering a therapeutically effective amount of a phosphodiesterase Type 4 inhibitor and a compound of claim 10.

36. (canceled).

37. (Previously Added) A method of claim 34 wherein: the phosphodiesterase Type 4 inhibitor is [4-[3-(cyclopentyloxy)-4-methoxyphenyl]-2-pyrrolidinone].

38. (Previously Added) A method of treating inosine monophosphate dehydrogenase associated disorders comprising: administering an therapeutically effective amount of the pharmaceutical composition of Claim 17.

39. (Previously Added) A method of treating inosine monophosphate dehydrogenase associated disorders comprising: administering a therapeutically effective amount of the pharmaceutical composition of Claim 17 and another agent known to be useful in treatment of such disorders.

40. (Previously Added) A method of treating inosine monophosphate dehydrogenase associated disorders comprising: administering a therapeutically effective amount of the pharmaceutical composition of Claim 17 and a phosphodiesterase Type 4 inhibitor.

41. (Previously Added) A method for the treatment or prevention of allograft rejection comprising: administering a therapeutically effective amount of the pharmaceutical composition of Claim 17 and a phosphodiesterase Type 4 inhibitor.